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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,226	06/07/2002	Yves Reignoux	09669/005001	7556
22511	7590	12/03/2003	EXAMINER	
ROSENTHAL & OSHA L.L.P. 1221 MCKINNEY AVENUE SUITE 2800 HOUSTON, TX 77010			GEBREMARIAM, SAMUEL A	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/890,226		REIGNOUX ET AL.	
	Examiner		Art Unit	
	Samuel A Gebremariam		2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-7 drawn to a semiconductor device is acknowledged.

Drawings

2. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.
3. Figure 1 should be designated by a legend such as --Prior Art—in English, because only that which is old is illustrated. See MPEP § 608.02(g).
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "26" has been used to designate both window and encapsulating material. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Tada US patent No. 5,155,068.

Regarding claim 1, Tada teaches (figs. 4a-4d) an integrated circuit device, characterized in that it comprises: an active chip (4b) of a semiconductor material comprising an electrical circuit (col. 2, lines 54-69), the active chip having an active face (upper surface of 4b) provided with a plurality of electrical connection terminals and a second face (lower surface of 4b), wherein the active chip has a thickness of less than 100 um (col. 2, lines 34-39) and a complementary chip (4a) having a first face (surface where 4b and 4a are joined) attached to the active face of the active chip, a second face (upper surface of 4a) and a side surface, the complementary chip has a larger thickness than the active chip (col. 2, lines 28-47).

Tada teaches that the complementary chip (4a) having a plurality bump electrode (7) and external connections (5) connected to each other (col. 2, lines 45-47). Therefore the complementary chip (4a) inherently has a plurality of recess extending through the whole thickness of the complementary chip.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada in view of admitted prior art.

Tada teaches substantially the entire claimed structure of claim 1 above except explicitly stating that the thickness of the active layer ranges from 5 to 50 μm and the thickness of the complementary layer ranges from 100 to 200 μm .

Parameters such as thickness and width in the art of semiconductor manufacturing process are subject to routine experimentation and optimization to achieve the desired device quality during fabrication.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the thickness of the active chip and complementary chip within the range as claimed in order to form an integrated circuit card.

Regarding claim 4, Tada teaches substantially the entire claimed structure of claim 1 above except explicitly stating that the complementary chip is formed with the same semiconductor material as the active chip.

Tada teaches that of forming an LSI chip (40) and forming complementary chip (4a) on the active chip (4b) made of silicon.

LSI chips are routinely formed on silicon substrate it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the same material to form both the complimentary chip and active chip as claimed in the structure of Tada since silicon is widely used in the fabrication of integrated circuits.

Regarding claim 5, Tada teaches substantially the entire claimed structure of claim 1 above except explicitly stating that an insulating substrate having an outer face

provided with outer electrical contact pads and an inner face, the second face of the active chip being attached to the substrate inner face.

Admitted prior art teaches (fig. 1) an insulating substrate (18) having an outer face provided with outer electrical contact pads and an inner face (upper surface of 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the insulating substrate taught by admitted prior art in the structure of Tada in order to provide a better support to the integrated circuit structure.

Furthermore the combined structure of Tada and admitted prior art would inherently have the second face of the active chip being attached to the substrate inner face, and a plurality of electrical leads, each lead having a first end connected to a contact terminal and a second end connected to an outer contact pad and lying entirely between the plane containing the second face of the complementary chip and the insulating substrate (fig. 1 of admitted prior art).

Regarding claim 6, Tada teaches (fig. 1, admitted prior art) substantially the entire claimed structure of claim 1 above including the insulating substrate includes windows (26), each window being disposed above an outer electric contact pad (where lead 24 is connected).

Regarding claim 7, Tada teaches (fig. 1, admitted prior art) substantially the entire claimed structure of claim 1 above including an electronic unit according to claim 5.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A and B are cited as being related to smart card devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A Gebremariam whose telephone number is (703) 305-1913. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 305-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SAG
November 26, 2003



Samuel A. Gebremariam
SUPERVISOR, PATENT EXAMINER
NOV 26 2003